White Paper
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Project Director: Marianne Weldon
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PROJECT ACTIVITIES AND ACCOMPLISHMENTS

Bryn Mawr College received a $40,000 planning grant from the National Endowment for the Humanities Sustaining Cultural Heritage Collections grant program to develop a plan for creating a cost-effective and energy-efficient storage area for the College's Special Collections. Most of our collections, including the historical records of the College, are currently stored in the College's main library, the Miriam Coffin Canaday Library, and in portions of College Hall, built as a library in 1910 and now primarily an academic building. As planning begins for renovating these building, we have an opportunity to re-imagine our collection storage options, and to create spaces with the kind of temperature and humidity controls that are essential for the collections' long-term preservation. To advance this planning, we requested funds to engage consultants experienced in retrofitting older buildings for the storage of cultural collections and to commission them to determine what practical and environmentally sustainable options are available for creating appropriate environments for the collections.

In fall 2016, Project Director Marianne Weldon convened a project committee, which comprised the Curator/Academic Liaison for Art and Artifacts, the Director of Special Collections, the Chief Information Officer and Director of Libraries, all special collections full-time staff, the College Architect, Energy Officer, Environmental Safety Officer, and Director of Facilities. The project committee reviewed the scope of the project, collected and reviewed current data on the buildings' operating systems, and posted a call for proposals to potential consultants. After reviewing bids from various consultants and comparing costs estimates, experience and recommendations, the committee selected Samuel Anderson Architects, whose expertise is well respected among conservators and who is already familiar with our situation. During this period we had a preliminary conversation to schedule the initial visits for Sam Anderson's team and to identify additional information the consultants needed.

Samuel Anderson is Principal of Samuel Anderson Architects and served as the study team leader for the outside consulting team. He specializes in new construction and renovation of existing exhibition and storage facilities for collections and has been working in the field for 38 years. The consulting team included Mandi Lew, Designer with Samuel Anderson Architects, who served as the team's project manager; Rick Meilan, Partner in Charge and Chief Mechanical Engineer with Kallen + Lemelson Consulting Engineers, who served as the advising engineer; Marek Grebowiec, Consulting Engineer with Kallen + Lemelson Consulting Engineers; and Mark Petersen, a nationally recognized security consultant who has provided security system designs and advice for leading museums and libraries.

Prior to the consulting team's visit to campus in February 2017, the Bryn Mawr project committee provided the consulting team with extensive information about the Special Collections storage areas, buildings, and building systems and requested an analysis of the heating, cooling, and air conditioning (HVAC) systems serving art and library special collections exhibit and storage areas in Canaday Library and College Hall. The goal of the consulting team's campus visit was to identify efficient options for creating environmentally-stable storage conditions. Various members of the College's facilities staff with expert knowledge in the day-to-day operation of the buildings' systems also met with the consultants. The consulting team's final written analysis included HVAC systems performance, construction, controls and potential

repairs or remedial work needed with particular attention to the environmental conditions in Special Collections storage spaces.

Findings

Samuel Anderson's consulting team completed a full assessment of HVAC, lighting and security systems in Canaday Library and College Hall, in accordance with Phase 2 plans described in the grant proposal. Canaday Library currently has Special Collections and Art and Artifact collections dispersed over four floors, and College Hall has collections on three floors.
The consultants found similar climate conditions in both buildings, since the HVAC systems were designed to maintain stable temperatures, but not stable relative humidity. As a result, humidity levels fluctuate wildly, an undesirable situation for special collections materials. In Canaday Library there are significant lighting problems because the lights in the Special Collections areas are tied in to the building lighting system, and so are on for 21 hours each day. In addition, most of the lighting is fluorescent, with no UV filtration. The lights in College Hall are also fluorescent, but they are turned off when people are not working in the spaces. The security systems in both areas are outdated, and the current system of caged spaces in Canaday Library does not provide adequate physical security for the collections. The detailed report from Samuel Anderson Associates is attached.

In order to address the climate, lighting and security problems of our current system of dispersed storage, Samuel Anderson Architects recommended consolidating most of the rare book, manuscript, art, and artifact collections in the sub-basement, or B-level, of Canaday Library.

The creation of a consolidated collections storage space on the B-level has multiple advantages.

1) Because it is below grade, the environmental conditions are naturally more stable than those of the upper floors.
2) The space is directly adjacent to the main mechanical equipment rooms for the building, and these are ideal locations for new HVAC systems dedicated to providing museum/archive grade climate control.
3) Creating a single museum-quality storage space is substantially more cost-effective than upgrading the multiple storage spaces throughout the building.
4) The B-level is capable of supporting compact shelving, unlike the other library floors, and in fact already has extensive compact shelving installations used for the general library collections that could be adapted for Special Collections use.
5) The space is the only floor in the building with a sprinkler fire-suppression system, a critical requirement for cultural collections.
6) The storage area is adjacent to the loading dock, and this will allow for an entryway and temporary holding space for new collections.
7) The security of the collections will be improved by moving them away from high-traffic public areas and into a newly-designed space that has a modern security system and better physical controls over entry.

8) By having a single large space, the fluorescent lighting can be replaced with LED lighting that is motion-activated, significantly reducing the amount of light to which the collections are exposed.

The Samuel Anderson Associates report included detailed drawings for reconfiguring the space on the B-level so that a consolidated, secured space could be created for storing the range of collection types that Special Collections manages. The space includes a small cold storage unit, space for processing collections, and a holding space for newly-acquired collections. The plans also include paths to allow maintenance crews to access the mechanical rooms without going through secure collections areas, and for the public to continue to have access to the general collections that will continue to be stored on that floor, although outside of the secured Special Collections areas. The recommendations also include detailed instructions on the type of HVAC system that will need to be installed in order to provide the controlled temperature and humidity levels that the collections need.

Because the creation of a consolidated collections storage area will require considerable planning and renovations that may take several years, Samuel Anderson Associates also recommended a number of steps that can be taken immediately to improve conditions until the larger renovation can take place. In Canaday Library, they recommended improving the weatherproofing of the building from outside air, pollution, and pests through improved caulking and weather stripping. For the lighting in Canaday, they recommended placing UV filters on all of the fluorescent bulbs in the storage areas and reconfiguring the lighting circuits so that the lights are on only when people are working in those spaces. In College Hall, they recommended UV filters for all of the fluorescent bulbs, and installing humidifiers and de-humidifiers in the storage spaces.

Project Evaluation and Long-Term Impact

The Preservation Study for the Bryn Mawr College was vitally important in providing us with a coherent plan for creating museum-quality storage for the College's stellar collections of rare books, manuscripts, art works, and cultural artifacts. The grant enabled us to bring in a well-respected architectural consulting firm with experience in retrofitting older building for collections storage to study our options and advise us on the most promising paths to pursue. The consultant's major recommendation to consolidate most of the rare books, manuscripts, art works and artifacts in the sub-basement (B-level) of Canaday Library in order to create a secure, climate-controlled storage area is a compelling plan. Our Facilities Department has studied the plan in detail and agrees that it is feasible and would be the most practical means of creating an appropriate storage space.

We had hoped that the estimated price on the renovations would be low enough to make it possible to raise the money for the renovations through a quiet fund-raising campaign over the next year or two. After a larger project evaluation by our Facilities Department, though, the estimated total costs were at a level that will require us to incorporate the storage plans into a larger renovation project for Canaday Library. The tentative plans are to undertake this building-wide renovation after the completion of the College's current capital campaign in 2019. Having the Anderson plan in place, though, provides us with the foundation for the larger renovation planning process. The plan also provides an incentive to accelerate work an ongoing project of

assessing both the general library collections and the special collections. In the next two years, we will aim to complete this work ahead of the renovations and collection moves.

Our work in the fall focused on reviewing the consultants' recommendations in consultation with our Facilities Department and administration and determining when and how the recommendations could be implemented. Now that we know that the renovations are several years away, we will reconvene the planning group in the new year to discuss implementing the short-term recommendations. Some of the recommendations, particularly the installation of UV filters on the fluorescent bulbs in our storage units, should be something that can be done in the coming months, whereas exterior work to Canaday Library and the installation of humidification/de-humidification equipment in the College Hall storage rooms are likely to involve more planning and discussions about funding.

Because of the NEH planning grant, we now have a clear and feasible plan for creating the museum-quality storage space that our important collections warrant, and the report will be a critical document in building support among donors and friends of the College when it comes time to raise funds for the library renovations.

Appendix: A

BRYN MAWR COLLEGE
Preservation Study for Special Collections and Art & Artifacts Collections Environments

Preservation Study Report April 7, 2017

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April 7, 2017 *SAA Project No.1677*

Preservation Study for Special Collections and Art & Artifacts Collections Environments
Bryn Mawr College
Bryn Mawr, PA

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Bryn Mawr College
April 7, 2017

INTRODUCTION

Bryn Mawr College (BM) holds remarkable collections in the Rare Book, Manuscript and Archives "special collections" as well as in the Art and Artifact collections. The Bryn Mawr collections are used as a vital resource by a variety of academic departments, and are accessed regularly for research by students, faculty, and visiting scholars. The collections are currently stored in a series of discrete spaces in two buildings- Canaday Library and College Hall. The storage spaces do not meet current best practices for collections storage concerning security, access control, fire detection, fire protection, climate control, lighting and protection from leaks and pests. Samuel Anderson Architects (SAA) and its MEP engineering consultants Kallen & Lemelson (K&L) and security consultants MC Peterson & Associates (MP) have been tasked with identifying specific strategies for improving the quality of the College's existing storage environments, with a special focus on climate control, lighting control and security. This report summarizes our findings and recommendations.

CANADAY LIBRARY

Existing Conditions:

Canaday Library currently has Special Collections and Art and Artifact collections dispersed over four floors. The building systems and structure are not ideal for storage of these collections. Temperature in Canaday can be maintained steadily, but relative humidity (RH) fluctuates wildly, in much wider ranges than are suitable for special collections. (See attached K&L draft report for mechanical systems description). Lighting for the special collections spaces is tied into the building lighting system, and is on for 21 hours each day. Most of the lighting is fluorescent, with no UV filtration. (Both visible light and UV radiation degrade works on paper and art generally.) Lower Level B is the only floor with fire suppression (wet pipe sprinkler system). The structural slabs of all floors other than Lower Level B will not support compact storage systems. Security systems for collections spaces are incomplete or outdated, and security protocols should be evaluated. (MP report to follow.) Physical security should also be evaluated.

Collections are currently housed, examined and processed in Canaday as follows:

- *Lower Level B Cage*:
  - This cage houses college archives and manuscript collections, largely stored in banker's boxes. (College archives can possibly be relocated; SAA recommends this to free up much needed space for collections)
  - There had been water infiltration along the southeast wall of the B-cage which has been mitigated by an injection system.
- *Lower Level A Cage*:
  - This cage houses select manuscripts and most of the rare books -over 50,000 books. (The remaining 1,000 +/- rare books are stored on the upper floors).
  - Most books are stored on shelves, with many books or boxes too deep for the shelves.
  - There are three banks of flat files (nine 5-drawer flat files stacked three high) housing maps.
- *First Floor Rare Book Room 103*
  - This is the primary gallery/ exhibition space in BM.
  - Rare books and incunables are housed in built-in cases.
  - General lighting is typically turned off in this room. Only track lighting is used
- *First Floor Vault, Room 103B:*

    - The vault houses medieval manuscripts and the most valuable items in the collections
- *Second Floor Cage:*
    - This cage houses special collections, mostly in solander boxes and spatial book boxes on shelves, which often overhang the shelves.
    - Items are also stored in (9) 5-drawer flat files. (***BM to confirm quantity, and what is stored inside the flat files***.)
- *Second Floor Special Collections Storage Room 204:*
    - This room houses African Art, Oceanic Art and Asian Scrolls. Objects are stored in Delta brand type cabinets and on shelving- both free-standing (covered in plastic) and in solander boxes. Framed works are stored vertically on pallet racks.
    - Carts and processing supplies are stored in this room.
- *Second Floor Seminar/ Exhibit Collections Room 205:*
    - Archaeological collections (mostly pottery) are stored in Delta cabinets along one wall. There is a picture rail along another wall.
    - This room is used for seminars and meetings and has a big conference table in the middle.
- *Second Floor Coomb Exhibition Case:*
    - Exhibitions in this case are typically curated by students from the College's Exhibitions Study program.
    - This exhibition case typically displays collections for three months at a time or longer, but never longer than one year.
- *Second Floor Reading Room 202:*
    - This is a reading room for rare and special collections.
- *Second Floor Special Collections and Art and Artifacts Offices/ processing spaces, Rooms 200 & 200E:*
    - Special collections and art and artifacts are processed and may be temporarily stored in these rooms.

Larger Vision for Canaday:

In discussions with library, curatorial and other special collections staff, it was revealed that the various departments that share the library have been hoping for a larger, more holistic renovation of Canaday. In light of the building's shortcomings as a whole, the following notable ideas are included as part of this study:

- There is a need for more exhibition space to compliment the College's exhibitions study program
- There is a need for more teaching and seminar space, to better support the wide variety of departments that access the collections for teaching on a regular basis.
- Provide space for storage of exhibition equipment. The lack of space currently compromises the collections storage spaces.
- A quarantine space is required
- Plan for future recession of the library collections and future growth of the special collections
- Exhibition spaces should have better environmental and security controls so BM can borrow from other institutions

Proposed Consolidation and Reorganization of Special Collections and Art and Artifact Collections (storage and support spaces) in Canaday Library:

Collections Storage: SAA proposes a consolidation of the collections (both special collections and art/ artifact collections) from the 2nd floor, Lower Level A cage, Lower Level B cage, and Collections Storage Room 204, all to be stored in Lower Level B of the library. The reasons for this relocation are manifold. Lower Level B is below grade, so the environmental conditions are naturally more stable than those of the upper floors. The space is directly adjacent to the two main mechanical equipment rooms (MER) in the building, which are ideal locations for new systems dedicated to providing museum/ archive grade climate control to that space. (See K&L Draft Report dated 04.07.2017). The floor is equipped with a sprinkler system which is crucial for special and art collections. The floor

has the structural capacity to densely store the collections and already has existing compact storage systems which can be refurbished to accommodate the varying needs of the special and art & artifact collections. Adjacency to the loading dock is good and an art path can be created between the loading dock and storage spaces. A separate maintenance path can be created so that maintenance and facility personnel do not need to enter the collections storage spaces for routine maintenance and repairs.

Our recommendation includes refurbishment of compact storage shelving and fixed storage to accommodate the following:

- Deeper shelves for banker's boxes and larger solendar boxes.
- Deeper shelves for art and artifacts. SAA proposes that the most frequently accessed art and artifacts be stored in the new Lower Level B storage space, or in the storage/exhibition cases in rooms 204 and 205.
- Vertical tills or storage screens for framed works.
- Flat files for maps and larger flat works.
- A Cold Storage vault (10'x10' interior dimensions) for film based materials and contemporary color photography. ***BM to confirm climate control requirements***. If the vault is very cold, a cool storage antechamber (10'x6' interior dimensions) should be included as works will need to acclimatize between museum grade and cold storage climate conditions.

In order to make room for the special/ art collections, the library collections from Lower Level B would move up to the areas vacated by special collections on Lower Level A and the 2nd floor. Some library collections would need to remain in a quarter of the compact storage shelving in Lower Level B due to the volume of the library collections. It is our understanding that the library collections will recede over time and the special collections will grow, taking over the remaining library collections space on Lower Level B. Until that time, SAA proposes to install a temporary, secure "cage-type" partition to divide the public stacks from the secure special and art collections storage. SAA has been told that students and other visitors are not happy to go down to the B-Level stacks, and so moving the majority of the collections to the upper floors would be better for visitors coming to access the main library collection.

If and when controlled relative humidity is introduced in the consolidated Lower Level B storage space it will be very important to prevent the migration of water vapor between that room and adjacent spaces. SAA recommends the introduction of a continuous air vapor barrier at the surrounding walls and slab above. Special consideration should be paid to the many penetrations through the ceiling slab above.

Rare Book Room/ Gallery/ Vault: SAA recommends the implementation of museum grade climate control to the *First Floor Rare Book Room* 103 by placing dedicated mechanical unit in the west MER and running ducts up through the now abandoned staircase. A vestibule may be required to maintain good climate control in that room. Similarly a dedicated unit for the *Vault* would be placed in the west MER and ducted up through the staircase to the vault. The existing building envelope of Canaday Library was not designed or constructed to address the challenges of steady 50% relative humidity. Accordingly, if proper climate control were introduced into that space, the wall would allow vapor migration resulting in condensation and related consequences in the walls. Therefore, if BM decides to introduce climate control into that space or any of the spaces bordering exterior walls, those walls would need to be modified so as to preclude vapor migration and condensation. Typically this would include high performance fenestration and a continuous air-vapor barrier on the "warm-wet" side of the assembly. SAA's recommendation to introduce climate control for the Rare Book Storage/ Gallery suite encompasses these building envelope remedies as well.

Other Exhibition Spaces/ Cases: The only other existing opportunity for exhibition is the Coomb Exhibition Case on the second floor. It is not economically feasible to introduce a climate control system just for this case, so BM should continue to monitor temperature and relative humidity in the case, and to consider those patterns when curating exhibitions for that case. BM could also consider lower wattage light bulbs and hygroscopic masses as ways to mediate extremes of temperature and relative humidity. If the museum–training syllabus would benefit

from additional exhibition cases, SAA suggests placing them in the current stacks, in close proximity to the Coomb Case.

Teaching & Seminar Storage Rooms: To address the need for additional teaching spaces, SAA is proposing that Collections Storage Room 204 be turned into a teaching and seminar room with frequently accessed Art and Artifact collections stored in cases along the walls, similar to Seminar/ Exhibit Collections Room 205. As it would be prohibitively difficult and expensive to provide museum-grade climate control to rooms 204 and 205, humidity-buffered exhibition cases should be used for storage of organic materials that are vulnerable to wide swings in humidity.

Reading and Processing Rooms: It is prohibitively difficult and expensive to provide museum grade climate control in the existing *Second Floor Reading Room 202* and *Second Floor Special Collections* and *Art and Artifacts Offices/ processing spaces, Rooms 200 & 200E*. Processing spaces would be provided in the Lower Level B storage areas for collections stored there as well as for items that require more precise climate control conditions. SAA proposes that the items in Gift Room B14 be culled and removed and that a portion of that room be given over to the larger storage space as a processing and processing supplies storage area. A second processing and processing supply storage would be incorporated into the Lower Level B area.

Supply & Exhibition Storage: SAA recommends that the remaining portion of Gift Room B14 be turned over to supply storage of packing materials, housing materials and frames. Carts can be stored here as well. The storage of non-collections items in the north-west area of this room seems prudent considering the water problems that portion of the room has been experiencing.

Quarantine: If possible, SAA recommends that one of the storage rooms in Lower Level B be converted to a quarantine room to inspect and sequester collections that may be contaminated with pests or mold.

See attached sketches SK-3A, SK-3B & SK-3C for Proposed Diagrammatic Floor Plans showing the above recommendations.

Recommendations for Building Systems in Canaday for the proposed consolidated spaces:

Mechanical & Lighting: As noted above, SAA recommends the introduction of three (3) mechanical systems: one moderately large system for Lower Level B and two small systems for the Rare Book Room and the Vault. See attached K&L Draft Report dated 04.07.2017 for a complete description of mechanical and lighting systems for the proposed consolidated spaces.

Security: See the MC Peterson & Associates report detailing proposed Security System updates, modifications and adjustments (report to follow).

Fire Detection: SAA recommends installing a VESDA - very early smoke detection and alarm system - in the following spaces:

- *Lower Level B Collections Storage*
- *First Floor Rare Book Room 103*
- *First Floor Vault, Room 103B*
- *Second Floor Special Collections Storage Room 204*
- *Second Floor Seminar/ Exhibit Collections Room 205*
- *Second Floor Reading Room 202*
- *Second Floor Special Collections and Art and Artifacts Offices/ processing spaces, Rooms 200 & 200E*

Early smoke detection is particularly important in dense storage conditions and in spaces that do not have fire suppression systems.

INTERIM & LOW COST MEASURES

SAA was tasked with ascertaining reasonable strategies for change and adjustment that would allow the College to achieve significant improvement in performance without undo expenditure of money or energy. SAA understands that moving the majority of the collections to Lower Level B, and providing museum grade storage, climate control, lighting and security systems to that space, may be of a magnitude greater than what the College was anticipating. Regardless of which direction the College decides to pursue, there are some interim measures that could be taken to improve the existing collections storage and processing spaces. They are as follows:

Lighting:

- Measures should be taken to limit light exposure to the special and art/ artifact collections if they are not moved, or until they are moved, to Lower Level B. See K&L draft report, section IV. The following measures are proposed:
    - Place UV sleeve filters on all florescent bulbs in areas where collections are processed or stored.
    - K&L is recommending that the addition of motion detectors in collections spaces may be a relatively inexpensive way to control the exposure to light.
    - Reconfigure the lighting circuits so as to isolate the lighting controls for the collections storage and processing spaces from the general building controls. Implement protocols so that lights are turned on only when needed in those spaces. K&L anticipates that this may be a costly measure and requires further investigation.

Mechanical:

- See K&L draft narrative, section 3F, "Interim & Low Cost Improvements for Canaday Existing HVAC System" for mechanical recommendations.

Security:

- Security interim recommendations to follow

General:

- Seal gaps in the building envelope with caulk and weather stripping to improve weather tightness. Per K&L draft report, section 3F, this will improve physical conditions, reduce air infiltration, reduce pest access, reduce heating/ cooling loads, and reduce air pollution & particulates in the building.
- Take measures to reduce water access.
- Create a more secure condition at the existing Lower Level 2 and Second Floor Cages: strategically place motion detectors at the cage walls to detect any intrusion into the cages.

MORE AMBITIOUS MEASURES

The Canaday Library building was not designed to manage controlled Relative Humidity and in fact has a very loose building envelope. Bringing museum grade climate control to the entire building without making modifications to the building envelope will result in condensation and all of the problems that come with it. Should BM choose to acclimatize the entire building, they could consider the following steps:

- Introduce humidity control to the entire Canaday Library building. See K&L draft report, section 3G, "More Ambitious Measures for Canaday Building".
- Window replacement from single pane metal framed windows to high performance thermally insulated windows. This would be required if elevated humidity is introduced into the entire building.

The above measures would be very costly to pursue. SAA recommends that BM include them if and when the entire building is slated for renovation.

College Hall

Existing Conditions:

College Hall currently has art and artifact collections dispersed in several locations, one of which is also used for teaching. The building has different mechanical systems serving the different storage spaces, but none are ideal for maintaining proper conditions for the collections stored there. Temperatures in most of the collections storage spaces can be maintained steadily, but the relative humidity fluctuates wildly. (See attached K&L draft report for mechanical systems description). Lighting in the spaces appears to be locally controlled linear fluorescent fixtures. The spaces have wet pipe fire suppression systems although the required 18" clearance between the sprinkler heads and the nearest storage systems is not present throughout. Security systems for some of the collections spaces are incomplete or outdated, and security protocols should be evaluated. (MP report to follow.)

Collections are currently housed, examined and processed in College Hall as follows:

- *Mezzanine A, Collections Storage Room CC2*:
  - A room for storage of artifacts from the Native American, Oceanic, Asiana and Heritage collections, most of which are oversized or oddly-sized.
  - Much of the furniture in this room will likely be de-accessioned.
- *Mezzanine B, Collections Storage Room CC3*:
  - Art and Artifacts are stored here on an open cantilever type shelving system with steel posts braced at the floor and ceiling slabs. Objects are either freestanding on the shelves with plastic over them, or in bankers boxes.
  - There is a big layout space in the room.
  - There is oversized furniture, covered in plastic, sitting on the floor.
- *Third Floor Archaeology Collections Storage & Teaching Room*
  - Approximately 24 Delta-type cabinets & several glass display cabinets
  - Three big layout tables for teaching/ processing.
  - Processing supply storage cabinets & carts
  - Shelving for boxed and bagged items
  - Two offices are adjacent to this space
- *Lower Level Digital Media Photo Studio Room 015:*
  - This room was a photography studio but is currently used for mount-making and temporary object storage.
  - There is a freezer housing acetate negatives and some objects.
- *Lower Level Photo Studio Room 016:*
  - This room was formerly a darkroom, but is now used for UV examination
- *Lower Level Collections 'Office' Storage Room 019:*
  - This room houses oversized collections
- *Lower Level "Grad/Collections" General Storage Room 020:*
  - This room is used for general supply storage.

Recommendations for Art and Artifact Collections Storage and Support spaces in College Hall:

Collections Storage: SAA proposes maintaining the three main collections storage spaces (the *Third Floor Archaeology Collections Storage & Teaching Room*, *CC2* and *CC3*) while improving the climate control, security and lighting conditions in those spaces. SAA recommends that frequently accessed Art and Artifact collections currently stored in College Hall, that may be viewed/studied in Canaday Library rooms 204 & 205, be moved to and stored in Lower Level B of Canady. SAA further recommends culling the furniture and objects in Room *CC2* that the College is not planning on keeping to make room for the collections currently stored in *Room 019* which does not have museum grade climate control. SAA is recommending that individual units to control temperature

and RH be added to serve the individual spaces. See K&L report for proposed climate control recommendations for the three main collections storage spaces.

SAA has been told that the steel posts that support the existing shelving systems in CC2 & CC3 are not structural and can be removed. If desired, a study can be done to rethink the collections storage furniture systems in CC2 & CC3 to tailor the systems to the collections being stored there, and make them more efficient.

Processing Areas: The three main collections storage spaces have, and should maintain, ample worktable room for laying out and processing collections. Processing supply storage within the processing areas should be evaluated and added to/ made more efficient if necessary.

Teaching & Seminar Storage Rooms: The *Third Floor Archaeology Collections Storage & Teaching Room*, will be maintained as a teaching and seminar room. See K&L draft report for mechanical modifications to this space. MP's security report will follow with recommendations for systems modifications to this space.

Collections Support Spaces: SAA proposes that UV examination continue in Room 016, and Mount Making continue in Room 015. Objects stored in Room 015 and Room 019 should be moved to CC2 or CC3 in space opened up from the deaccessioning of furniture and from moving some objects to Canaday Lower Level B Art and Artifact storage.

Supply & Exhibition Storage: SAA recommends that Room 109 be used as supply storage of packing materials, housing materials and frames. Carts can be stored here as well.

Quarantine: It seems prudent that quarantine of all works coming to Bryn Mawr take place in the Quarantine room in Canaday Library, which would be accessible from the loading dock.

<u>See attached SK-3D, SK-3E & SK-3F for Proposed Diagrammatic Floor Plans showing the above recommendations.</u>

Building Systems in College Hall for the collections spaces:

Mechanical: As noted above, SAA recommends the introduction of humidification/ dehumidification to two of the main storage spaces in College Hall. See attached K&L Draft Report dated 04.07.2017 for a description of proposed mechanical systems for the collections spaces. There is little risk in adding humidity to rooms CC2 and CC3 because they are entirely surrounded by other enclosed spaces. Painting the walls with a paint that can act as a vapor barrier should be sufficient treatment for the walls in those rooms. The Archaeology Room, however, has exterior exposure, so adding humidity there would require significant modifications to the building envelope.

Lighting: See section V, 'Lighting Systems in College Hall' of the attached K&L draft report.

Security: MC Peterson & Associates report detailing proposed Security System updates, modifications and adjustments to follow.

Fire Detection: SAA recommends installing a VESDA- very early smoke detection and alarm system – in the three main collections storage spaces. Early smoke detection is particularly important in dense storage conditions.

INTERIM & LOW COST MEASURES

SAA was tasked with ascertaining reasonable strategies for change and adjustment that would allow the College to achieve significant improvement in performance without undo costs of money or energy. There are some minor

interim measures that can be taken to bring the existing collections storage and processing spaces up to better conditions. They are as follows:

Lighting:
- Put UV filter sleeves on all florescent bulbs in areas where collections are processed or stored.

Security:
- Security interim recommendations to follow

MORE AMBITIOUS MEASURES

K&L has noted that one option for providing humidity to CC2 & CC3 would be to add humidity to the AHU for those spaces, which also serves all of Carpenter Library. (See attached K&L draft report, 'More Ambitious Measures for CC@ & CC3'.) If BM is interested in pursuing this option, a more detailed study should follow showing the implications of adding elevated humidity to Carpenter Library, in particular in the Atrium space.

Access to the three main collections storage spaces is compromised. All three of the main collections storage spaces must be accessed via stairs. (They lack elevator access.) This puts the collections at risk as they are being moved, and also makes the spaces inaccessible for staff and students with disabilities. This is particularly concerning in the Third Floor Archaeology Storage and Teaching Room. Providing elevator access to those three spaces would require considerable reconfiguration of spaces and would be disruptive to the architecture and occupants of College Hall. Such a reconfiguration is outside of the scope of this study, but can be pursued if desired by the College. It could also be considered whether another location with better access, better building envelope and better climate control conditions should be considered for future storage and processing of the Art and Artifacts Collections stored in College Hall.